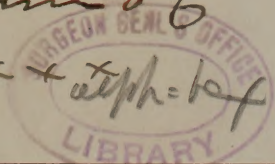


WOOD (T.)

*A Compendium of
Anatomy x x alph = b f.*



COMPENDIUM
OF
ANATOMY.



A
COMPENDIUM
OF
ANATOMY,
DESIGNED TO ACCOMPANY
THE
ANATOMICAL CHART,
BY T. WOOD, M. D.

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GENERAL VIEW OF THE HUMAN BODY.

As the object of the author in publishing the Anatomical Chart is, not only to facilitate the study of Anatomy in the office of the Physician and Surgeon, but also in families and common schools, where a knowledge of the human organization is more desired, than a familiarity with the technicalities used by the professional anatomist; it is thought best to explain the different parts in the most familiar language, discarding in all cases, the Latin terms where the English can be used as a substitute.

The drawing represents the principal points of interest in the arterial, venous, and nervous systems; and where it could be done, the glands and muscles are shown.

The bowels have been removed to show the distribution of the sympathetic nerve, the great blood-vessels of the abdomen, and other important organs situated behind their position:

The human body is composed of various organs and structures, differing widely from each other in texture and organization, as well as the functions or offices they are designed to fill. By taking the organs of similar composition and structure we get what anatomists call a system: thus we have the

OSSEOUS SYSTEM, including all the bones, or the frame on which the softer organs are supported.

The bones are composed principally of phosphate of lime and cartilage; they are possessed of no feeling in a state of health, and when diseased do not exhibit the sensibility found in the other structures, and are much more compact on the outer than inner surface. The bones taken together, when stripped of all the soft parts, are called a skeleton. Anatomists treat of the skeleton under the natural divisions of head, trunk, and the superior and the inferior extremities.

The head includes the bones of the cranium and the face.

The cranium consists of eight distinct bones which unite in such a manner as form a large round cavity for the protection of the brain.

There are fourteen bones in the face and thirty-two teeth.

The trunk consists of the spine or back bone, in which there are twenty-four bones, and the thorax or chest, with the twelve ribs on each side, the breast bone and the pelvis.

Each superior extremity has two bones in the shoulder, one in the arm, two in the forearm and twenty-seven in each hand.

In the lower limbs there is one bone in the thigh, two in the leg, and twenty-six in the foot.

The cartilages are white elastic grissely substances, partaking some of the nature of bone, though they are much softer from the want of a deposit of earthy matter. They cover the ends of bones where a joint is formed, giving them a smooth polished surface and preventing friction of the joints. Cartilage also gives form to the nose, the ear and other parts where a yielding elastic texture is required, and where bones would be inconvenient and often broken.

The ligaments are strong cords—white, and of a fibrous texture. Their office is to hold the bones together at the joints, and consequently are very strong and unyielding in their composition. They are found surrounding every joint and at the connexion of the cartilages with the bones.

The MUSCULAR SYSTEM includes all those organs, that, by contracting under the influence of the nervous energies, give the varied motions that the body and limbs are capable of performing. They are made up of bundles of red fibres, and constitute what is called lean flesh or meat in animals. The power exerted by the muscles is very great, and it has been estimated that in some it is equal to the weight of several thousand pounds.

The TENDONS are white cords of great strength, found on the ends of muscles and connecting them with the bones. They vary in shape and size according to the muscles to which they belong. In some cases they are several inches in length, in others they are spread out in broad sheets having a beautiful white, shining, silky surface. The tendons are almost insensible to the touch, or even to the knife of the surgeon, and are not often the subjects of disease, but when it does occur in them it is always slow in progress and difficult to remove.

The NERVOUS SYSTEM is constituted of small white thread-like cords, that are sent off from the brain and spinal marrow, and are interwoven with the texture of all the other parts of the

whole system. They seem to act as telegraphic wires in keeping up the communication of the brain with the remote parts of the body; but the true nature of their action is yet unknown. It is only conjectured that their power is a modification of galvanic or magnetic influence, but it has never yet been demonstrated. To the nervous system belongs a net work of small nerves, extending from the head down through the chest and abdomen, connecting by its filaments the heart, lungs, liver, spleen, stomach, kidneys, bladder, &c., together, and to the general nervous system; and it is through these filaments that they are enabled to sympathise with each other and harmonise in their actions. It is believed that it is the sympathetic nerve and its ganglions that governs the heart, and keeps up respiration and the various operations of the system, independent of the will, and during sleep. Hence it is found to be of great use in the phenomena of life.

GLANDULAR SYSTEM. The office of the glandular system is to take materials from the blood and manufacture various fluids, peculiar to each, that are necessary to the perfection and growth of the animal system. Thus the liver, which is

the largest gland, secretes the bile—the kidneys, urine—the parotid gland, saliva—and the mammary gland, the milk for the nutriment of the young.

DIGESTIVE SYSTEM.—The alimentary canal is a long tube, extending from the mouth to the lower part of the abdomen. It is from twenty-five to thirty feet in length, and varies much in diameter in the different parts of its course, and has different names applied to its natural divisions: The portion extending from the mouth to the diaphragm is called the *æsophagus*; it then swells out into a large sack laying directly across the body from left to right, called the stomach.—It is then contracted again into a portion called the duodenum. In this division the bile, after being secreted from the liver and mingled with a fluid from the pancreas is received, to perform its part in digestion. From the duodenum the small intestines originate, and are folded up in the abdomen, occupying the space below the naval and between the hip bones. The canal then changes into the large intestines, called the *coecum*, colon, and *ructum*.

The food being masticated and swallowed enters the stomach, where it undergoes some

important changes, and is passed on into the small intestines, to give up its nutritious materials to the absorbants, to be thrown into the veins and converted into blood.

The ABSORBENT SYSTEM, is made up of small hair like tubes, arising from all parts of the body, which by uniting form larger trunks, and these combining form still larger, till they finally concentrate into one common trunk of considerable size named the thoracic duct; this great duct lies on the spine nearly in the position of the aorta, and after receiving in its course the lacteals it opens into the left subclavian vein.

The absorbents have two offices to fill in the animal economy: one is to take up the worn out and expanded fluids of the whole system and throw them back into the circulation to be replenished; and the other is to pump up the nutrient particles from the food as it passes through the alimentary canal, and throw it into the veins, where it becomes mingled with and converted into blood.

On taking a survey of the person, it will be found naturally divided into the head, neck, chest, abdomen, and upper and lower extremities. In the region of the head dwells the gov-

erning principle of life; and the mind that governs, guides and instructs the whole man, appears to be dependent on the head for its existence. The vitality of all the organs of the body is derived from the head, for in them death at once ensues on its destruction, and sometimes upon apparently slight injuries. The head contains the brain, and the five senses: hearing, smelling, seeing, taste and feeling, are found perfect in that region, and only the sense of feeling extends beyond its limits.

All the parts of the human frame are auxiliary to the wants of the head and the organs it contains, and to obey its commands, seems to be the whole object of their existence. It is doubtless in the head that the mind or the immaterial man dwells; making that peculiar pulpy substance, called the brain, its favorite abode,—peopling it with a busy multitude of thoughts, emotions, and affections.

The neck is the connecting medium of the head and body. We find compact into the narrow isthmus of the neck, large and important blood vessels and nerves,—the wind-pipe, conducting air to the lungs,—the bony column, supporting the head,—the spinal marrow,—the

æso-phagus, and a large number of muscles, and it is so replete with important communicating organs, that it is barely possible to give it much of a wound without hazarding life. At some points very slight incisions would prove instantly fatal. At the back of the neck where it joins the head, the penetration of a small pen knife blade to a small depth, or the puncture of a common awl, would prove so instantly fatal as scarcely to admit of a struggle.

On the front of the neck a little above the breast bone, on either side of the wind pipe, the carotid arteries and jugular veins are so near the surface as to be easily cut through, and the flow of blood in them is so rapid that a few pulsations of the heart is sufficient to drain the system of its vital fluid.

As we descend into the body we find the organs, upon which the continuance of life depends, more protected and to bear injuries, as a general rule, with less danger than those of the head and neck.

By the chest we understand all that great cavity included within the embrace of the ribs, and extending from the lower part of the neck to the pit of the stomach, and directly behind

the breast bone. It contains the lungs, the heart and several of the largest blood vessels in the system. In the chest is the grand centre of the circulation of the nutritious fluids of the body. The food passes through it in a long muscular tube, on its way from the mouth to the stomach.

Very extensive wounds may be inflicted on some of the organs of the chest without destroying life, though such injuries are always considered highly dangerous, and if inflicted on the heart, or any of the large vessels, they are most certainly fatal.

The abdomen includes all that portion of the body below the chest. It is divided from the chest by a thin muscular partition called the diaphragm. The organs that are found in the abdomen are, the liver, stomach, spleen, gall bladder, the bowels, kidneys, pancreas, urinary bladder, and, in the female, the uterus.

Wounds of the abdominal organs are not necessarily fatal, but in danger they are only second to wounds of the chest, and are always considered by the surgeon of very serious import.

The lower limbs, are composed of bones, strong muscles, blood vessels, and nerves, and

are used entirely as slaves to carry the system from place to place. Wounds of their large arteries are the most dangerous, but they are not always fatal, for the whole limb may be amputated and the person not only live, but enjoy perfect health; which is not the case with any of the organs of the head, neck, chest, or abdomen.

The upper extremities are composed of organs very similar to those of the lower limbs, but they are designed and used for a more noble and greater variety of purposes. We are indebted to our arms and hands for nearly all the comforts of life. It is the incomparable perfection of these organs, and the readiness with which they obey the impulses of the mind, in cutting, hewing, carving, and moulding material things to the shapings of inventive thought, that enables man to raise himself in the scale of creation far above all other beings in the "great chain" of animated nature. Without them the magnificent endowment of mind and thought, bestowed on man, in such a pre-eminent degree by the Creator, would be a useless gift: for ideas if spoken, could not be written, and the beautiful and useful creations of an inventive genius, could only gain a mental shape and form, without a material existence.

EXPLANATION OF THE PARTS
REPRESENTED ON THE
ANATOMICAL CHART.

A. The PAROTID GLAND is situated under the ear, in the space between the lower jaw and the neck. Its use is to secrete the SALIVA, a fluid designed to moisten the food in the mouth while undergoing the process of mastication. The saliva is poured into the mouth through a small tube called the Duct of Steno (B.) The parotid gland is the seat of the mumps, and when attacked becomes much swollen and painful for a short time, but the swelling soon subsides in most cases without treatment.

C. The MALAR BONE is the bone of the cheek.

D. The ORBICULARIS ORIS muscle surrounds the mouth. Its use is to keep the mouth closed and to assist the lips in performing their varied motions in speaking, eating, &c., &c.

E. The MASSETER muscle is a very strong muscle that may be felt by laying the hand on the cheek and making an effort to close the jaws

very tight. Its use is to draw the jaws together in the act of chewing the food.

F. The BUCCINATER muscle is one of the muscles of the mouth and draws its corners backwards so as to widen the mouth.

G. The LAVATER ANGULI ORIS is a small muscle that lifts up the angle of the mouth and gives expression in smiling.

H. The ORBICULRAIS OCULI is a circle of muscular fibres that surround the eye, and by its contraction closes the lids.

I. The EXTERNAL EAR is a thin cartilaginous expansion so shaped as to collect and concentrate the vibrations of sound in the direction of the tympanum, and materially assist in hearing.

K. The TRACHEA is the tube through which the air is drawn into the lungs, and is commonly called the wind-pipe, and the LARYNX is a small cartilaginous box situated on its upper end, in which the voice is formed, by the air being forced rapidly over vibrating cords, called the VOCAL CORDS.

L. The THYROID GLAND is a body composed of two globular portions, one on each side of the trachea and connected together by a small band of glandular substance passing in front of the

trachea. This gland is one of the small number of organs of which the use is not yet known.

M. M. The CLAVICLES are what are commonly called the collar bones, and may be felt laying at the base of the neck, and extending from the upper end of the breast bone to the shoulder joint. They are very easily broken and are often the subject of such accidents.

N. The TRAPEZIUS is a strong broad muscle extending from the back of the head and neck to the shoulder blade, and is useful in supporting the shoulder and drawing it upwards.

O. The DELTOID muscle lays directly on the arm over the shoulder joint, it is a very thick strong muscle, and is said to be capable of lifting many hundred pounds weight. Its use is to raise the arm directly upwards.

P. The BICEPS FLEXOR muscle lies on the front of the arm. Its use is to bend the arm at the elbow, and draw the hand towards the mouth.

BELOW THE CLAVICLES.

A. A. The LUNG occupies the largest portion of the cavity of the chest and has a structure peculiar to itself. In organization as well as the function it fills, it is wholly unlike any other organ in the body, and consequently admits of no classification. It is divided into two portions, called the right and left lung, and each of these are subdivided into lobes. The lung is covered with the pleura, an exceedingly smooth and delicate membrane that is also continued over the ribs, giving a complete lining to the inside of the chest. The substance of the lung is the lightest structure in the body, and is made up of innumerable small tubes, air cells, and exceedingly minute blood vessels. The air tubes are formed by dividing the trachea into countless branches, that finally become so small as not to be distinguished by the naked eye. They then terminate in small cells around which equally minute blood vessels are distributed, carrying there the venous blood, which is impelled through them by the right ventricle of the heart, and brought in so near a contact with the air, as to be converted into arterial blood, by absorbing oxygen and giving off car-

bonic acid gas. It is then fit to be sent again with its vivifying influence to all parts of the body. The lung is very liable to inflammations, and is the seat of the much dreaded and truly formidable disease, consumption.

B. The HEART is the centre of the circulation of the blood. It is composed of strong muscular fibres, and is in the shape of a cone with a rounded apex, and hollowed out, and divided into four cavities,—two are called the right and left AURICLES, and two the right and left VENTRICLES. The blood passes through all these cavities in completing the round of the circulation.

The situation of the heart is in the chest, between the right and left lungs. It is not precisely in the centre, but inclines more to the left side, where its pulsations may be felt. It is subject to many diseases that often prove fatal. Wounds of the heart mostly prove fatal in a short time.

C. The PERICARDIUM is a strong sack placed over the heart to restrain its action, and prevent too great a distention and rupture of its fibres, in the powerful shocks and emotions it is liable to meet.

D. The DIAPHRAGM is a thin muscular partition interposed between the abdomen and chest, and by its contractions has much to do in enlarging the cavity of the chest in the act of breathing. It has openings in it for the passage of the æsophagus and large blood vessels.

E. E. The RIBS are twenty-four in number, twelve on each side, and are fastened at their back ends to the spine, by a moveable joint.

F. F. The LIVER is the largest gland in the body. It is divided into two lobes by a deep fissure through which its large blood vessels pass. In the chart it is turned up so as to show its undersurface, and the position of the gall bladder. The office of the liver is to secrete the bile; a fluid of essential service in digestion, and a healthy action of the bowels. The liver is very liable to inflammations, and in the tropical climates is often the seat of painful and fatal abscesses.

G. The GALL BLADDER receives the secretion of the liver and retains it until it is demanded by the wants of the system.

H. The STOMACH is a large sack laying on the left side, behind the small lobe of the liver. It

is in the stomach the food lodges when it is first swallowed, and is conducted through the first stage of digestion ; by mingling with gastric juice, and being converted into a pulpy mass called CHYME. The Stomach is the seat of a train of distressing affections of its own, besides sympathising deeply with nearly all the diseases that arise in the other organs. Dyspepsia and indigestion in all their various forms depend upon a derangement of the functions of the stomach. But when we reflect on its unmerciful abuses, by the sensualist, the glutton, or the inebriate, we are astonished at its powers of endurance, and freedom from fatal lesions.

L. The SPLEEN is an oblong flattened glandular body, situated on the left, and large end of the stomach. Physiologists have not yet been able to discover its use in the animal economy.

J. J. The RENAL CAPSULES are small bodies placed above the kidneys, but their use has not yet been discovered.

K. K. The KIDNEYS are two oval glandular bodies situated in the lumbar region. They separate or secrete the urine from the blood.

L. L. URETERS—through these tubes the urine flows to the bladder, as it is secreted by the kidneys.

M. M. The Psoas Magnus,

N. N. Psoas Parvus.

O. O. AND ILLIACUS INTERNUS muscles all originate in the pelvis, and are attached to the thigh bone at different points and assist in performing its varied motions.

P. The RECTUM is the lower extremity of the bowels, and is the seat of the painful disease called the dysentery or flux.

Q. The BLADDER is a reservoir or receptacle for the urine. It is often attacked with inflammation, and sometimes stones are found in it, formed from deposits from the urine.

R. R. VAS DEFERENS is the excretory duct of the testicle.

S. S. The EXTERNAL ABDOMINAL RING is an opening through the walls of the abdomen, for the passage of the spermatic cord, and spermatic vessels.

T. The PUBES,

U. U. The FASCIA FEMORIS is a dense cellular membrane, formed beneath the skin, binding the muscles down, giving a more neat, and compact appearance to the limb.

THE BLOOD VESSELS.

1 Aorta. 2 Brachio cephalic artery and vein. 3 Subclavian artery and vein. 4 Common carotid artery, and internal jugular vein with the pneumogastric nerve between them. 5 Internal carotid. 6 External carotid. 7 Superior thyroid artery and vein. 8 Lingual artery. 9 Fascial artery and veins. 10 10 Occipital artery, veins and nerves. 11 Posterior auris artery. 12 Temporal artery and nerve. 13 Axillary artery and veins, and showing part of the axillary plexus of nerves. 14 Brachial artery and veins. and median nerve. 15 Radial artery and veins. 16 Ulnar artery and veins; (on the arm the median and ulnar nerves are seen.) 17 Abdominal aorta emerging from behind the stomach; the branches given off after it become visible, are the superior mesenteric, capsular, emulgent, spermatic, inferior mesenteric, lumbar, and middle sacral arteries. The abdominal aorta is accompanied by the ascending vena cava, and over its surface is exhibited the distribution of the great sympathetic nerve. 18 Common illiacs.

19 External illiac. 20 Internal illiac. 21 Sper-
matic artery, vein, and nerve. 22 Epigastric
artery. 23 Circumflex illiac. 24 External pu-
dic artery and veins. 25 Femoral artery, nerves,
and veins. 26 Profunda femoris.

A CALL TO THE READING PUBLIC,

BY FREDERICK BLY,

VINE STREET, THIRD DOOR ABOVE FOURTH, EAST SIDE.

I will give a list of valuable works. First of all, the Anatomical Chart, or map of the Human Frame, which is very instructive not only to students and physicians, but to every inquiring mind. This can be purchased at wholesale or retail at a fair price, from F. Bly. In addition to this, he has on hand a supply of casts of the brain as it is dissected in six different parts, so that the purchaser can have one or the whole, as he may wish. Each one of these numbers show the different portions of the brain; they are a true representation of this all important member, even in texture. Price for the whole set, \$5; single No. \$1.25.

In connection with the above can be found here a fine assortment of Phrenological busts, designed for those who wish to become acquainted with Phrenology, also casts of some distinguished persons. And a great variety of medical books—Allopathy, Homœopathy, Hydropathy, Eclectic, and Mesmerism—also a general assortment of Phrenological works by the different authors. Dr. Buchanan's Journal of Man, History. School Books, Tracts, Periodicals, Children's Books, and all sorts of Stationery.

It would be very beneficial to every individual to study works which relate to the body and mind, Physiology and Anatomy especially. The community in general should be better acquainted with these subjects; then they could act and judge properly towards themselves and others.

Phrenology is the chief of sciences. Frederick Bly offers his services to the public as a practical Phrenologist. He has been blind from his birth, and was educated at the Institution for the Blind, and has devoted his entire attention to the subject of Phrenology for many years. His acuteness of touch, rendered still more exquisite by practical application, (being compelled to use his fingers instead of eyes, for reading,) enables him to delineate the minute developments of the cranium with much more accuracy and precision than any one blessed with sight. Every person would be greatly benefitted, more especially young men, in being intimately acquainted with their own capacities. This knowledge ensures success and happiness. Come each and every one—both great and small—see and hear for yourselves; your time and means will be profitably employed. Among thousands of distinguished names he is permitted to refer to, he will only submit the following from the Hon. Henry Clay:—"I take pleasure in recommending Mr. Frederick Bly, the bearer hereof, to the patronage and friendly attention of the public, as a gentleman who, considering his natural misfortune, has made extraordinary attainments, and whom I have known advantageously.—HENRY CLAY."

